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STRATEGIC MOBILITY FOR THE NATIONAL MILITARY STRATEGY

by

Richard W. Kokko  
Lieutenant Colonel, USMC

A RESEARCH REPORT SUBMITTED TO THE FACULTY

IN

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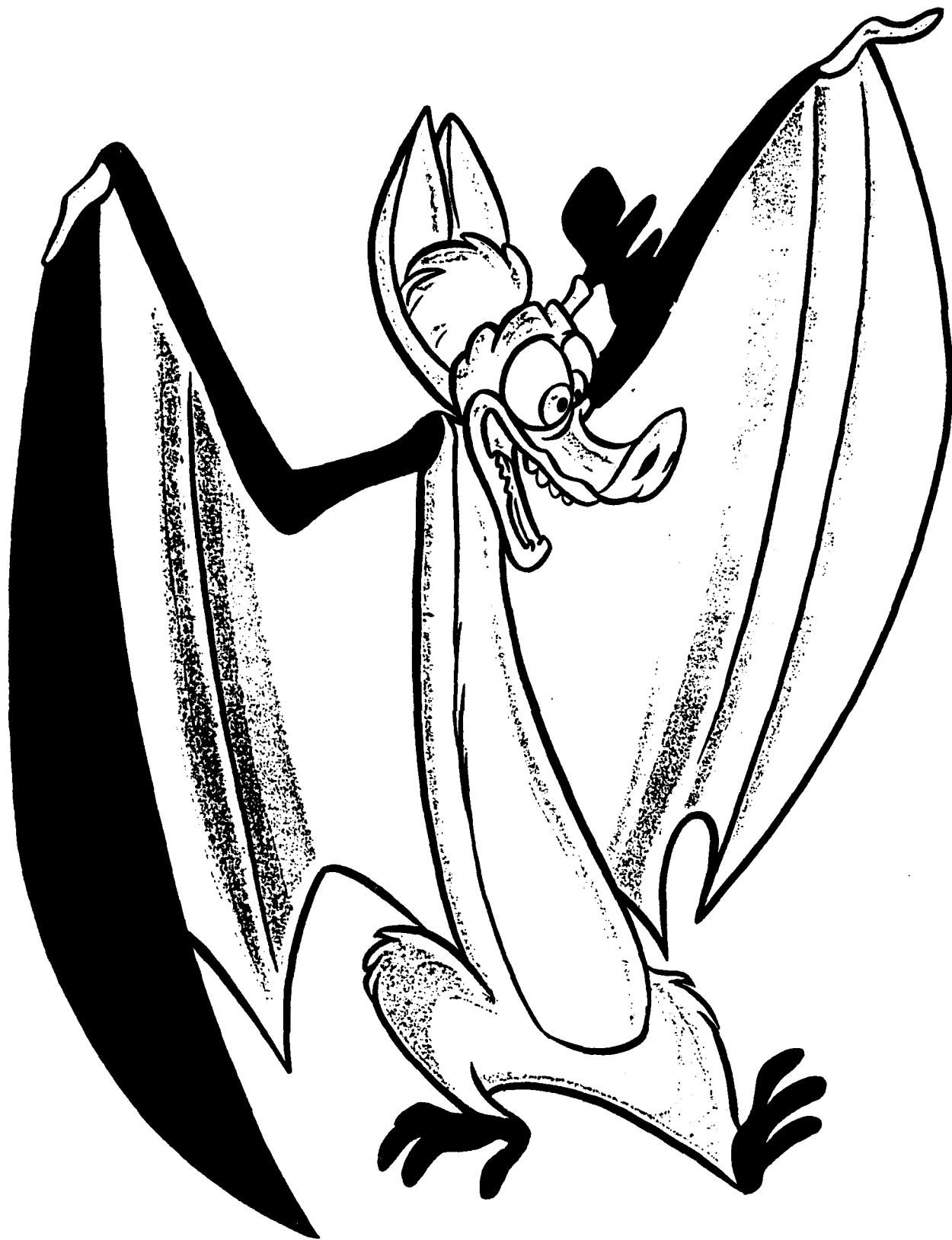
## ABSTRACT

TITLE: Strategic Mobility for the National Military Strategy

AUTHOR: Richard W. Kokko, Lieutenant Colonel, USMC

The National Military Strategy, and the National Security Strategy it supports both place particular emphasis on the need for strategic mobility in conducting crisis response. Our current thinking on strategic mobility centers around the mobility triad of airlift, sealift, and prepositioning (both sea-based and land-based). Each leg of the triad has its own capabilities and limitations.

The Gulf War was a test of the nation's mobility capability built during the Cold War, a capability that never met its requirements. As we examine the lessons of that war and look ahead, new thinking and principles must emerge. The 1992 Mobility Requirements Study by JCS is a significant step in that direction, but it is still partially anchored in Cold War thinking. Land-based prepositioning has limited utility in supporting the new National Military Strategy. What is needed is a new strategic triad of airlift, sealift (including sea-based prepositioning) and amphibious lift. Defense force structure and strategic mobility need to be built and funded hand-in-hand.



"Lift! I Need Lift!"

Batty Coda, star of  
"FernGully, the Last Rainforest"

## MOBILITY AND THE STRATEGIC LANDSCAPE

For the past century, the United States has largely relied<sup>1</sup> on strategic mobility and access to the world's sea and air lines of communications to conduct military strategy in support of national political objectives. Up until most recently, the national military strategy of the post-World War II era has been dominated by preparations for major confrontation with the Soviet Union and the Warsaw Pact. The national strategic mobility posture has featured forward deployed forces, preparedness for massive airlift and sealift deployments from CONUS and prepositioned war reserves configured to support these force deployments. This posture has been maintained in unrelenting fashion during periods of lower intensity conflict elsewhere, most notably in Vietnam.

The most salient feature of the Cold War strategic mobility posture was that it never attained sufficient capability to accomplish its mission. No combination of airlift, sealift and prepositioning (the "mobility triad") ever gave the nation the means to deploy close to the total forces, equipment and supplies<sup>2</sup> called for by NATO and the Regional CINCs' war plans. America's political leadership set lift capability goals at far lower levels, based on political and fiscal compromises. The resultant conventional force imbalance in part necessitated maintaining a strong posture of nuclear strategic deterrence.

Within the past few years the strategic landscape has been devamped and Cold War assumptions shattered. The greatly

diminished threat from the former Soviet Union, the Conventional Forces in Europe Treaty, and domestic budget constraints are resulting in drastic reductions in overall force structure and in forward-deployed forces in particular. The United States emerges into a new era as the only true superpower in the world, yet with substantially less forces in Europe and around the world. Conflict among competing political and ethnic groups as a result of the breakup of the Soviet empire, ongoing conflicts in the Middle East and Southwest Asia, the widespread proliferation of sophisticated weaponry, and the emergence of dangerous international drug cartels in the Americas illustrate an unstable and unpredictable world.

The 1993 National Security Strategy of the United States,<sup>3</sup> lists four fundamental elements of national defense strategy:

(1) Strategic deterrence and defense which will continue to be provided by a triad of nuclear weapons delivery platforms (submarines, inter-continental ballistic missiles, and strategic aircraft) and may come to include some form of a strategic defense initiative;

(2) Forward presence consisting of deployed naval forces, access to ports and airfields critical to lines of communication, and greatly reduced overseas basing;

(3) Crisis response where our ability to project power through strategic mobility means will be crucial to conventional deterrence and capability to conduct operations deemed in the national interest;

(4) Reconstitution of capabilities in the event of the resurgence of a global threat.

Crisis response will probably be the most unpredictable challenge of our national defense strategy. The National Security Strategy describes the importance of crisis response capability in terms that issue a clear challenge to all who work in providing the nation's strategic mobility:

"We must maintain an adequate capability to project power in response to crises should our efforts to deter conflict fail. The very existence of a robust crisis response capability strengthens deterrence. Our force structure must be flexible enough to ensure we can fulfill both traditional and non-traditional requirements. In addition, the capability to generate decisive combat power, if and when needed, strengthens our ability to terminate a given conflict swiftly on terms favorable to us and with minimum loss of life." 4

The current National Military Strategy guides the armed forces, and places significant importance on strategic mobility to accomplish crisis response:

"Our ability to project power, both from the United States and from forward deployed locations, has strategic value beyond crisis response. It is a day in and day out contributor to deterrence, regional stability, and collective security. It becomes an even more critical part of our military strategy since overseas presence will be reduced and our regional focus has been enhanced." 5

This paper will focus on the nation's ability to support crisis response through strategic mobility. The first objective is to review capabilities and trends in strategic mobility as a matter of background. The second objective will be to examine where we have been, where we are and where we need to go in our thinking on strategic mobility.



Much of our thinking about strategic mobility remains imbedded in Cold War logic and needs a fresh look to best meet current and future challenges. During the Cold War the challenge was to move large amounts of personnel and tonnage between known points. The challenge now involves less personnel and tonnage, but more unpredictability in force requirements and destinations. We must transition from a problem that was largely quantitative, to one that is now relatively more qualitative. Moreover, strategic nuclear deterrence will likely have limited application to regional crises; we must be able to deploy and project conventional military power in our national interest.

This paper will not be an attempt to quantify lift requirements or to analyze deployment systems, but to examine the thought process and the principles needed in determining our mobility posture. This requires identifying the dinosaurs remaining in our thinking, and changing the strategic mobility triad. But first, a note about the lessons of the Gulf War.

#### MOBILITY AND THE DESERT SHIELD/DESERT STORM EXPERIENCE

The test of the nation's strategic mobility capability built to meet the threat of the Cold War, came unexpectedly during the waning days of that conflict, in the sands of Southwest Asia. The Gulf War clearly demonstrated the requirement for more strategic lift to enable the United States to rapidly respond to contingencies around the world with substantial forces. This was not a new lesson, but rather a validation of quantity shortfall already identified in supporting conduct of war in Europe.

There are ample lessons learned from the deployment to the Gulf which should continue to be studied for some time, particularly with respect to how well certain assets performed and how deployment systems operated. In particular, it is useful to see how prepared we were to commence deployment on very short notice. The potential pitfall from the Gulf War is to assume that the United States will again have as long to deploy forces, and the opportunity to systematically deploy and employ its forces in a conflict area without opposition. The modern infrastructure and extensive host nation support (particularly water and POL) are unlikely to occur in future conflicts in other locations. This was a unique war which tested our mobility capability, provided time needed to mass assets, and which was also very forgiving of our shortfalls in rapid closure. On the whole, the lessons of the Gulf War indicate more problems than promise as to our future ability to handle regional crisis response.

#### THE CURRENT MOBILITY TRIAD

For the past decade or so, senior military leaders and policy makers have talked of a strategic mobility triad<sup>6</sup> consisting of airlift, sealift, and prepositioning. The mobility triad remains prominent in both our lexicon and in our thinking. Analogous to the strategic triad that provides our nuclear deterrence capability, each leg of this triad makes its own unique contribution to national military objectives. Each

element has its own strengths and limitations, which when properly integrated support and complement each other in the accomplishment of the mission.

#### AIRLIFT

Strategic airlift is by far, the quickest and most flexible component of the strategic triad, providing the United States with the capability to rapidly project combat power worldwide. Due to its inherent speed and flexibility, commanders find it attractive to meet their deployment requirements with airlift. It is ideally suited to rapid response in fast breaking crisis situations by airlanding or airdropping forces and material across long distances (e.g., deploying "trip-wire" ground forces or emergency relief supplies). Airlift is the most effective means of moving people rapidly - 99% of personnel transported to and from Southwest Asia were by air.<sup>7</sup> Airlift's greatest contributions come early in conflicts requiring rapid deployments, any time during a conflict when combat conditions call for emergency or high-priority movement or resupply, and before a conflict when the threat of moving a sizable combat force into an area may preclude undesirable developments.

Airlift is limited by capacity, inability to transport certain types/sizes of equipment and supplies, refueling/basing constraints and the need for air superiority or escort protection. It is impractical to move POL or large amounts of ordnance by airlift. One B-52 sortie can drop the load carried by one C-141 sortie.<sup>8</sup> Such limitations necessitate the vast

preponderance of tonnage often be moved by sealift. Thus it becomes advantageous to use airlift forces early in order to buy time for sealift to arrive.

The nation's total strategic airlift capability includes the combined air assets of the military and commercial air carriers under the provisions of the Civil Reserve Air Fleet (CRAF). CRAF is a partnership program between the Department of Defense and the civilian airline industry whereby the airlines contractually commit their aircraft, crews and infrastructure to DOD use during emergency conditions. In turn, these airlines receive DOD peacetime contractual business. CRAF elements support DOD passenger, cargo and aeromedical evacuation requirements and can<sup>9</sup> be activated in three stages, based on the level of crisis.

Operations Desert Shield and Desert Storm marked the first<sup>10</sup> activation of any level of CRAF since its origin in 1951. Planning factors normally anticipate 5% of total cargo to be moved by air. With the push to build up combat power in the desert quickly, military airlift assets and volunteer commercial assets were quickly overwhelmed, resulting in the first-time activation of CRAF Stage I on 18 August 1990. As the build-up continued, and to ensure continued priority movement of critical cargo, CRAF Stage II was activated on 17 January 1991.

While CRAF proved to be responsive and proficient, it lacked the flexibility of military aircraft. Operational problems experienced by commercial aircarriers, such as unfamiliarity with the handling of hazardous cargoes, the lack of proper charts to

assist in approaches to unfamiliar airfields, and the absence of some communications equipment to interface with their military counterparts, contributed to unique and special challenges faced by the CRAF. Commercial pilots averaged nearly 25 years older than military pilots, and had some difficulty adjusting to<sup>11</sup> waivers of operational flying hour restrictions.

The United States currently has the capability to airlift approximately 48 million ton miles per day (MTM/D) when fully mobilized, including approximately 18 MTM/D provided from CRAF capability. Airlift capability is projected to remain constant through FY 1995 and then to increase gradually to 51 MTM/D by FY 1997, providing the projected delivery of C-17 aircraft occurs at<sup>12</sup> rates exceeding C-141 retirements. Maintaining the nation's airlift capability, and in particular the modernization gains<sup>13</sup> achieved during the 80's, rests heavily on the C-17 program.

#### SEALIFT

Sealift is the second component of the strategic mobility triad and its overall workhorse. It is normally the most cost effective means of deployment. One modern container ship can<sup>14</sup> lift the equivalent of 150 C-5 sorties. This is attractive to the supported commander, provided the time involved does not generate unacceptable risk. As with Desert Shield/Desert Storm and previous conflicts, sealift accounts for the vast preponderance<sup>15</sup> of resources deployed. Virtually all petroleum-oils-lubricants (POL) are transported by ship. Sealift's contribution to rapid deployment is the sustainment and resupply of forward deployed

forces or forces rapidly airlifted during the early critical days  
16  
of a crisis. Sealift can be limited by access to ports and the  
need for sea control or protective escort.

The U.S. strategic sealift capability is comprised of ships  
in the National Defense Reserve Fleet (NDRF), Military Sealift  
Command (MSC) controlled ships, U.S. flag, and effective  
U.S. Control Fleet:

(1) The NDRF includes the Ready Reserve Force (RRF) and  
the Naval Inactive Fleet:

-- RRF is composed of government owned, inactive  
commercial ships with military utility, maintained by the US  
Maritime Administration in 5, 10 or 20 day states of readiness;  
activation is controlled by Department of the Navy

-- the Inactive Fleet or mothball fleet is maintained  
by the Navy and may grow by 1995 to over 200 ships with drawdown;

(2) MSC controlled fleet consists of government  
chartered dry cargo and tanker ships that include:

-- two aviation logistics support ships designed to  
support a Marine Aircraft Wing

-- 8 fast sealift ships converted to a roll-on/roll-off  
configuration to support rapid movement of Army equipment from  
CONUS

(3) U.S. flag Merchant Marine Fleet: Oceangoing cargo  
ships owned by U.S. businesses and operated under U.S. registry,  
available via voluntary charter or requisitioning after a  
Presidential declaration of national emergency

(4) Effective U.S. controlled fleet: U.S. owned but foreign registered ships under flags of selected countries,  
17  
availability contingency on case by case basis.

Problems currently facing strategic sealift are: the age of the fleet, the precipitous decline of the U.S. Merchant Marine, and the inability of government and industry to develop a uniform plan to satisfy national sealift requirements. The fleet's age showed itself in the readiness of the 45 RRF ships called up for  
18  
Desert Shield. Only 14 reached their loading ports on time. By the turn of the century, the RRF is expect to have a median age of 32 years. At this point, many of the older ships will reach the end of their useful life. The Inactive Fleet is largely antiquated and expensive to maintain compared with its usefulness. With the lack of current technology, few vessels can be brought into service quickly during emergencies as merchant marine personnel are largely unfamiliar with the operations of these older ships.

The U.S. merchant marine fleet has declined from some 1100 ships in 1968 to 164 currently, all container ships. This necessitated a heavy reliance on foreign shipping during the Gulf War. Additionally, the number of qualified American pilots and mariners has declined sharply; it was a significant challenge just to locate sufficient crews to operate RRF ships during  
19  
Desert Shield.

Congress has shown recent interest in developing fast and efficient ships with newer technology that are both militarily

and commercially useful. This means primarily Roll-On/Roll-Off (RO/RO) ships for fast loading and unloading of tanks, tracked vehicles and other large outsized combat vehicles. The Gulf War demonstrated the need for RO/RO ships to provide surge capability in delivering military equipment. Industry, however, has often been lukewarm to such dual-application, taking a position that military demands are unique and these assets are generally uneconomical for commercial use.<sup>20</sup>

#### PRE-POSITIONING

Land and seabased prepositioning together constitute the third leg of the mobility triad. Such prepositioning is meant to significantly reduce the lift requirements of moving equipment and supplies from CONUS and to enhance combat readiness and deterrence posture by being closer to conflict sites. Effective intratheater airlift of personnel and selected equipment/supplies is needed for the combat unit to "marry-up" with and their prepositioned material. Intratheater transportation may be required for subsequent onward movement to the combat area.

Pre-positioning requires a duplicate set of most unit equipment items. These duplicate sets have not been available in the past, as this would have meant either taking training equipment from CONUS-based units or buying additional items at prohibitive cost. Force reductions in the nineties will likely free up additional equipment sets, but there still may be competition for these assets for other purposes (e.g., modernize reserves, build equipment pools). All pre-positioning programs



also require security, equipment maintenance and upgrades, periodic inspections and rotation of shelf-life supplies.

Seaborne prepositioning is a unique blend of mobility capabilities. It offers flexibility as a mobile base for heavy material which can be more easily relocated or diverted enroute. Properly employed, it will have the advantages of being already loaded with required material, positioned closer to the destination and in a higher state of operational readiness. Ships at sea can operate in international waters for extended periods of time, eliminating sources of political sensitivity. Due to the Desert War and Somalia operations, sea-based prepositioning has attracted interest and political backing.

Ships utilized for prepositioning require protection from Navy combatants or the benefit of friendly sea control. Their utility diminishes if assets are required well inland. Most require port services to offload; those with in-stream offload capability do so at significantly reduced rates.

Current seaborne prepositioning assets include:

(1) 13 Maritime Pre-positioned ships (MPS), modified commercial vessels under long term charter operating as three overseas squadrons; each squadron (4-5 MPS ships) carries the unit equipment and 30 days sustainment for a Marine Expeditionary Brigade, the equivalent of 4,500 C-141 sorties;

(2) 12 Afloat Prepositioning Ships (APS), dry cargo ships with a broad category of equipment and sustainment and tankers, all designated for Southwest Asia contingencies.

There are significant differences between MPS and APS. An MPS squadron directly supports Marine Corps operational forces with identified fly-in echelons (250 C-141 sorties) to deploy anywhere in the world. MPS Squadron 2 arrived in Saudi Arabia on 15 August 1990 and supported the stand-up of the first sustainable air-ground combat force in theater during Operation Desert Shield. By contrast, the APS is not tailored to specific units, is regionally focused and provides general support equipment and follow-on sustainment.<sup>22</sup> It did demonstrate its utility as an effective force multiplier during the Gulf War.

Land-based prepositioning has as its major advantage that it is already in place, provided that planners have correctly predicted where the conflict will occur and what equipment and supplies will be needed. This substantially reduces requirements for intertheater airlift and sealift movement and sea-based prepositioning. However, land prepositioning can greatly reduce flexibility. It relies on political support from the host nation to stockpile and maintain access. Movement of equipment and supplies from storage for use in support of that country, or especially elsewhere, also requires host nation consent. Removal of prepositioned stocks to support operations elsewhere can have politically detrimental impact on relations with the host nation.

Further limitations to land prepositioning include environmental sensitivities, such as to storage of ammunition and POL. Sophisticated and sensitive items such as advanced helicopters and avionics equipment cannot be readily stored, both

because of environmental control problems and because of their expense. Land-based stocks are lucrative targets for ballistic missile attack, terrorists or special operations forces.

Successful landbased prepositioning requires a secure area with a stable, supportive government. Placing land-based stocks in politically volatile areas where their security is suspect reduces their dependability. It also offers potential adversaries with an opportunity to force a U.S. response, and can prompt a "use it or lose it" outlook on the part of our leadership.

Two of the principal land-based prepositioning programs on effect today are the Army's Prepositioned Material Configured in Unit Sets (POMCUS) program in Central Europe and the Norway GeoPrepositioning Program in support of the Norway AirLanded Marine Expeditionary Brigade (NALMEB). The POMCUS program warehouses the equipment and supplies to support four U.S. Army divisions scheduled to deploy from CONUS to pre-determined locations in Germany in the event of war with the Soviet Union and Warsaw Pact. Under the NALMEB pre-positioning program combat equipment and 30 days sustainment for a 13,500 man airlifted brigade are stored deep inside mountain caves in central Norway.

Both programs can be qualified as success stories in land prepositioning. They indicate how political relationships with the host nations are key. In the case of POMCUS, the program was established within the framework of NATO, the longest and most successful western alliance in history. In the case of Norway, a

special relationship was developed that favored both the defense<sup>23</sup> and economic interests of the host country.

#### THINKING STRATEGIC MOBILITY - WHERE WE'VE BEEN

In October 1978 the United States conducted its first fullscale simulated mobilization exercise for three decades. Exercise "Nifty Nugget" featured a scenario which sent 400,000 troops to Europe in response to a fast-breaking Soviet conventional attack. The results clearly showed the country's great shortfall in mobilization capability and the ineffectiveness of its deployment systems. The exercise simulation indicated tremendous casualties would have occurred due to inadequate resupply and sustainment and defeat would have been assured. MAC was augmented by reserves and commercial airliners yet could handle only about a tenth of the outsize<sup>24</sup> cargo requirement.

The lessons from "Nifty Nugget" resulted in considerable interest in strategic mobility by military leaders and concerned political leaders as well. The U.S. Transportation Command was formed, and throughout the 1980's money was invested in enhancing airlift capability by upgrading C-5 and C-141 aircraft and planning for a new C-17 intertheater-intratheater airlifter. While progress was made in airlift capability, sealift continued to decline. The nation added some fast sealift vessels, Maritime and Afloat Prepositioning Shipping and expanded the Ready Reserve Force during the decade. However, the U.S. merchant marine and maritime industry continued their long term decline, the net

effect being to reduce the ability to implement national strategy  
25  
with our own sealift resources.

Concern over the nation's strategic mobility prompted the first of three major studies with the Congressionally Mandated Mobility Study (CMMS) completed in 1982. It included three scenarios in Southwest Asia in addition to a NATO-Warsaw Pact conflict. Two proposed options were submitted which attempted to close the gap with respect to supporting NATO, but also began to address the Southwest Asia problem. Both options included adding a third Maritime Prepositioning Brigade, substantial land pre-positioning of munitions and sustainment in Southwest Asia, more Roll-on/Roll-off ships and airlift to move outsized cargo. Neither option adequately supported the nation's war plans and neither was fully implemented. A political and fiscal compromise was established with requirements for 66 Million Ton Miles/Day although it was reported JCS really estimated airlift  
26  
requirements at 150 MTM/D. The capability figures arrived at by this compromise were never reached, although they did serve as milestones in gaining approval for enhancements discussed in the previous paragraph.

A second study, the Revised Intertheater Mobility Study (RIMS) followed the CMMS, with a sole focus on a Soviet invasion of Iran leading to global war as a "worst case scenario". Optimistic assumptions were made as to infrastructure and host national support. However the study revealed tremendous mobility shortfalls with great programmatic implications. DOD never

approved the results and its impact was minimal. Thus the two major studies of the decade left us deficient in dealing with or thinking through our formidable mobility shortfall.

#### 1992 MOBILITY REQUIREMENTS STUDY

The Mobility Requirements Study (MRS) was conducted under the direction of the Director for Force Structure, Resources and Assessment (J-8) Joint Staff in response to Congressional mandate. It evaluated the mobility requirement to support operations in the 1999 timeframe, developing an integrated plan to meet those requirements. Volume I is the best comprehensive documentation of current thinking on strategic mobility, yet remains partially committed to Cold War thinking.

The Mobility Requirements Study applied the Base Force from the National Military Strategy to selected crisis response scenarios to determine the lift and/or prepositioning needed to deploy the U.S. based forces or redeploy regional forces to achieve a favorable outcome. The study examined each scenarios (Middle East/Persian Gulf, Korea, Europe, Southeast Asia, Western Hemisphere) to determine force deployments required to resolve them with varying degrees of confidence. The MRS utilized war games as well as analysis from recent conflicts, to include the Gulf War. It assumed a projected force based on the FY 1992-97 Future Years Defense Plan for lift and pre-positioning to be available in 1999.

In the MRS, scenarios were wargamed using this baseline force and shortfalls in lift were identified and translated into

low, moderate or high levels of risk. The earliest phase, lasting approximately two weeks, would require forces on station to prevent the enemy from seizing key terrain. For the next five week period, initially deployed forces must hold until the U.S. can build overwhelming force in country. During this period strategic mobility requirements are put to the greatest test.

The MRS determined that different mobility assets played different roles relative to reducing risk during different phases. Airlifted forces were crucial early on to include light ground combat forces, support to self deploying aviation units, and ground combat units that could marry up with equipment and supplies aboard maritime and afloat preposition ships. Subsequently, risk could best be reduced by heavy forces brought in by rapid sealift. An additional risk factor was the amount of sustainment arriving with the force in theater. Forces deployed early on in Desert Shield incurred significant risk as available lift was dedicated to deploying combat forces with little sustainment in order to build a larger force more rapidly.

The overall conclusions of the MRS were as follows:

(1) The most demanding scenario for strategic mobility is the regional contingency to the Middle East or Persian Gulf; it is the only scenario in which the baseline force experiences high risk.

(2) It is more advantageous to reduce early risk than late risk, thus leaving more options open and decreasing the overall tasking for strategic lift.

(3) Afloat prepositioning is preferable to airlift in reducing early risk. Although it is less flexible, it is less costly and better able to close heavy forces.

(4) Land-based prepositioning is the least expensive, however it is not flexible enough to respond to conflicts occurring outside a limited radius from its location.<sup>30</sup>

The MRS then took the Middle East/Persian Gulf scenario as the most demanding ("worse case") and evaluated 13 mobility options using computer assisted wargaming techniques. Confidence ratings were developed, based on weighing early risk higher up front and weighing in risk factors where forces were deployed without sufficient support or sustainment. Three options, defined as "Low-Confidence/Low Cost", "Medium-Confidence/Medium Cost", and "High-Confidence/High Cost" were established. These present a matrix of closure times and assets required, with the middle ground being recommended as "the best balance among intertheater requirements, levels of confidence in successful outcomes, and costs."<sup>31</sup>

#### ANALYSIS OF MRS

The MRS is a major step in bringing our thinking on strategic mobility into the context of the new regional strategy, with its dynamic analysis of requirements, risks and costs. It is also a comprehensive effort to meaningfully apply the lessons learned from the Desert Shield deployment.

The MRS must be considered a starting point as further analysis is necessary on several points. First, the baseline



force assumptions in the MRS will likely be invalidated by upcoming defense budgets. The study also assumes successful C-17 delivery and additional sealift buys, neither of which are a certainty. Second, the MRS does not come to adequate closure on the possibility of the U.S. dealing with two major contingencies simultaneously. Our capabilities and limitations in this regard must be consistent with national interest. Third, in some cases the MRS assumes increased indication and warning time from that used in earlier Cold War studies. This assumption enhances the utility of sealift. However, the volatile nature of the current world requires us to be ready for crises such as Desert Shield developing with little or no notice.

In the MRS "ton miles per day" remains the key figure for airlift planning. While this a useful way to calculate capacity and cumulative requirements, neither ton miles or metric tons of sealift fully dictate mobility requirements. Force packages determine mobility requirements and the operational readiness of deployment means must be calculated into the mobility equation as well as tonnage figures. Readiness is a particular challenge with respect to sealift. The airlift assets are normally at higher states of readiness in both equipment and operators. For both military lifters and CRAF, pilots work regularly with the aircraft they would fly during wartime. As previously discussed, a significant portion of our sealift capability, however, is vested in older ships that do not operate regularly, and must be manned by crews unfamiliar with their systems

Finally, the MRS focuses on a future Southwest Asia deployment as the "worst case" scenario, and the most demanding on strategic mobility requirements. The inference is reminiscent of Cold War thinking - aim for the worst case and the rest will take care of itself. This is logical if cumulative tonnage is the only relevant yardstick, however, it does not necessarily mean we have the correct force packages and readiness to meet short notice requirements for each regional CINC.

## CONCLUSIONS

### I. DEVELOPING A NEW STRATEGIC MOBILITY TRIAD

While the 1992 MRS makes a strong attempt to break out from previous paradigms it remains tied to the old mobility triad of airlift, sealift, and prepositioning. Airlift and sealift clearly remain as pillars of our strategic reach. However, from the review of the current strategic mobility triad in a previous section, the conclusion reached here is that prepositioning is no longer a valid leg of that triad. This is for two reasons.

First, in thinking about mobility, sea-based prepositioning is best considered as a form of sealift. Its medium is the same and it still must transit from an origination point to a point of destination and deal with the problems of offloading and getting its contents to whomever and wherever it is needed.

Second, land-based prepositioning has limited application under the current national military strategy. Land-based prepositioning makes sense only to counter a predictable threat, at a known location, with a planned force. The pre-positioning

programs in Germany and Norway made sense within the context of executing SACEUR's war plans. They were never intended to support excursions. Similar circumstances for establishing land based programs are unlikely in the future. Land prepositioning in Korea and Saudi Arabia would be useful in the event of future hostilities in those locations. However, such programs are viable only so long as the host nation recognizes a real threat and can politically sustain U.S. presence. In that acquisition of strategic mobility assets requires long lead times, land prepositioning cannot be considered an important planning factor. The long lead times needed to acquire strategic mobility assets argues against assigning much weight to land prepositioning as a planning factor.

A new strategic mobility triad should include airlift, sealift and amphibious lift. <sup>32</sup> These three capabilities will provide the enabling means for the nation's crisis response and power projection (from other than stand-off platforms). In a strategy demanding worldwide flexible response, the three mobility factors are complimentary capabilities that are inextricably linked. Amphibious shipping, carrying landing forces capable of extended presence at sea and forced entry from the sea (i.e., deterrence and power projection), should become part of the mobility triad due to their unique capability within the context of the new national military strategy.

The 1992 MRS considers amphibious lift, but in a separate section following the current old mobility triad. This status as

a tangent issue is consistent with global war thinking, where amphibious forces were earmarked for NATO's flanks, essentially as an economy of force measure, and not involved with the strategic center of gravity on the Central Front. Amphibious forces, self-deploying and self-sustaining, largely were separated from airlift and sealift in our strategic thinking. This was part of a larger phenomenon of our strategic thinking where littoral warfare fell into a void between the great war on the Central Front and the great war at sea.

Cold War plans also assumed the battle would start in locations where American forces and infrastructure were already in position. Amphibious forces take on a greater potential role in a world with fewer forward bases and more potential for crisis response into an area without support or infrastructure. Their forced entry capability, potentially in conjunction with airborne assaults, can enable the deployment of follow-on airlanded and sealifted assets that could not otherwise occur. The amphibious shipping taking them to the crisis area must therefore be considered a key factor in our mobility capability.

As CINCs determine their force requirements for crisis response, it becomes possible to calculate airlift, sealift, and amphibious lift required to bring those forces into theater within the time required. On the individual theater level, reception/throughput capability at airfields and seaports becomes a crucial determinant of lift mix. Therefore, an airlift asset with the capabilities of the C-17 allows for greater exploitation

of the speed and flexibility of aviation for crisis response than<sup>33</sup>  
do current aircraft due to its capacity and access to airfields.  
Sealift must provide the surge capability to rapidly deploy  
equipment and supplies needed early on into a crisis area. This  
means sea-based prepositioning for Marine and Army units to  
include modern RO/RO lift for vehicles. Selected RRF ships that  
haul the Assault Follow-on Echelon for Marine amphibious forces  
must be maintained in the same level of readiness as<sup>34</sup>  
those amphibious ships.

Another important aspect of the new strategic mobility triad  
is that it supports giving amphibious shipping the appropriate  
visibility and priority in the programming and budgeting  
process. Programmatic must address the three elements of the  
triad in tandem, with due regard to their complementary effects  
in power projection. Amphibious shipping is in a period where  
such a programmatic policy is essential to maintaining this  
valuable national capability. Significant modernization has  
occurred over the past decade with the building of several LHA  
and LHD big deck ships and the LSD-41 class with Landing Craft  
Air Cushion (LCAC) capability. Studies by the Department of the  
Navy indicate 12 big deck amphibious ships, plus accompanying  
amphibs will be needed to meet present and future regional<sup>35</sup>  
CINCs' requirements. The long term projections for amphibious  
shipping look bleak, however, with the retirement of 52 ships,<sup>36</sup>  
including five entire classes, by 2007.

## II. COMBAT POWER - STRATEGIC MOBILITY

In order to support the National Military Strategy, the Services and warfighting CINCs will have to make strategic mobility a top priority. Defense force structure and the nation's strategic mobility must be built hand-in-hand so the mobility means exist to deliver all CONUS-based forces to a regional crisis within a reasonable amount of time, as defined by CINC requirements. There are three essentials to this. First, our political/military leadership must be willing to make force trade-offs in lieu of across-the-board defense reductions that leave us with less of everything, including still insufficient lift. Second, mobility assets that cannot be maintained in a high state readiness do us no good in responding to crises. For instance, RRF ships that cannot dependably put to sea within 30<sup>37</sup> days should be converted to other use or scrapped. Third, assets which cannot be deployed effectively are excessive force structure. This has significant implications for service force structures. The Army, which has built heavy forces for the European battles that never came, must now be prepared to deploy worldwide without the benefit of POMCUS. During the 1980's the Army enhanced their combat capabilities and in so doing<sup>38</sup> experienced a significant increase in lift requirements. The limitations on strategic mobility potentially threaten Army force structure more than that of any other service. The issue to be resolved goes far beyond a service interest, however. The armored

and mechanized capability that performed so brilliantly on the ground in the Gulf War will most certainly be needed if we are to successfully wage such a conflict again.

Budget constraints will force tradeoffs between combat power and strategic mobility. Strategic deterrence, tactical capability and mobility, previously placed in descending order of priority, must be moved onto a more level playing field in the budget process.

Finally, strategic mobility requires a long term commitment to a challenge defying a one-time fix. Completing the C-17 program and acquiring new sealift now should meet this decade's mobility challenges. The full consequences of the C-141 retirement and the age obsolescence of the RRF will become next decade's challenge. Nothing less than America's future as a world power is at stake.

## NOTES

1. Jeffrey Record defines strategic mobility as "the ability to move military forces in a timely fashion from one continent or theater of operations to another". Source: "Getting There", Parameters, June 1988, p. 89.

2. Jeffrey Record, "Getting There", Parameters, June 1988, and Benjamin F. Schemmer, "Airlift, Sealift in Short Supply at Very Time Need Grows Fastest", Armed Forces Journal International, May 1989.

3. U.S. Superintendent of Documents, National Security Strategy of the United States, Washington D.C.: U.S. Government Printing Office, 1993, pp. 14-15.

4. Ibid, p. 14.

5. U.S. Superintendent of Documents, National Military Strategy of the United States, Washington D. C.: U.S. Government Printing Office, 1992, p. 10.

6. "Mobility triad" can be found in the lexicon of military and civilian leadership and of academe. A chronology of how this term has been used in government and defense circles can be found in Lieutenant Colonel Charles E. Miller, USAF, Airlift Doctrine, Air University Press, Maxwell Air Force Base, Alabama, 1988, pp. 365-370. In the academic community, Ian O. Lessor writes of "The Mobility Triad - Airlift, Sealift and Pre-Positioning in American Strategy", RUSI Journal for Defense Studies, March 1986.

7. Joint Chiefs of Staff, Mobility Requirements Study, Volume I, Washington, D.C.: Government Printing Office, 1992, p. III-5.

8. Mark L. Hayes, "Sealift: The Achilles Heel of our National Strategy", Marine Corps Gazette, November 1992, p. 72.

9. Levels of CRAF activation are as follows:

Stage I - Committed Expansion. Assets activated by USCINCTrans for the purpose of meeting early contingency deployments.

Stage II - Airlift Emergency. Assets activated by SecDef for support of a national security crisis not declared an emergency.

Stage III - National Emergency. A national emergency is declared by the President or Congress, authorizing SecDef to activate a final group of assets.

10. Edward J. Driscoll, "They Also Serve (Civil Reserve Air Fleet)", Defense Transportation Journal, Jun 91, pp. 58-59.



11. Lieutenant Colonel James F. Willie, "The U.S. Strategic Mobility Posture--A Critical Factor to Support National Security Objectives", Research report, U.S. Army War College, Carlisle Barracks, PA, April 1992, p. 11-12.

12. Joint Chiefs of Staff, IV-5.

13. Department of the Air Force, "Airlift and the U.S. National Security: The Case for the C-17", 1991.

14. Hayes, 72.

15. Open sources generally list around 3.5 million S/T dry cargo and 6 million tons POL moved by sealift, or approximately 95% of all cargo tonnage transported.

16. As an illustrative note, the first two fast sealift ships arrived in Saudi Arabia on 27 August 1990, carrying more total tonnage than had been airlifted to SWA at that point. Source: Hayes, 73.

17. Data compiled from Hayes article and from Elmo Bessent, "U.S. Strategic Sealift Capability Study", Research report, U.S. Army War College, Carlisle Barracks, PA, 1991.

18. Andrew E. Gibson and Commander Jacob L. Shuford, "Desert Shield and Strategic Sealift", Naval War College Review, Winter 1991, p. 13.

19. Ibid.

20. Commission of Merchant Marine and Defense, Fourth Report of the Commission on Merchant Marine and Defense: Recommendations "A Plan for Action", Washington D.C.: Government Printing Office, 1989.

21. Lieutenant Colonel Lawrence M. Curtin, USA, "United States Strategic Sealift and the National Military Strategy", Research report, U.S. Army War College, Carlisle Barracks, Penn, 1991.

22. APS common items include such materials as tentage, light sets, trailers, obstacle/barrier construction material, trucks and heavy equipment handling vehicles. Consumable supplies include rations, ammunition, and POL.

23. In the case of Norway, political circumstances may well force the U.S. to extend this land pre-positioning program beyond its strategic usefulness. Norway views their threat in terms of Russian force posture across the Kola Peninsula; they view that threat as remaining viable and accordingly view the geo-prepositioning program as continuing to be vital to their security interests. This program has also become significant to

their economy and infrastructure development in North Norway. Hence the strategic interests of the U.S. and the host nation have grown apart. It remains politically difficult for the U.S. to stand down from this commitment.

24. John T. Cornell, "The Power-Projection Shortfall", Air Force Magazine, August 1988, p. 38.

25. Ibid, pp. 38-42.

26. Record, p. 92.

27. Gibson and Shuford, p. 9.

28. Joint Chiefs of Staff, p. IV-8.

29. Ibid, pp, IV-25 to IV-26.

30. Ibid. This summary is drawn from classified portions of the MRS (primarily section IV), with the specific data removed to keep the material at the unclassified level.

31. Ibid, p. IV-32.

32. "Amphibious lift" or "amphibious ship" refers to those U.S. Navy combatant ships designed to embark landing forces and debark them by surface and/or helicopterborne means against a defended shore. The following classes of ships currently in service are included: LHA, LHD, LPH, LPD, LSD, LST, and LKA. The term specifically does not include MPS, APS or other sealift ships which are not combatants and are not designed for forcible entry.

33. "...the C-17 combines the advantages of a strategic airlifter like the C-5 -range, speed, aerial refueling and payload (including outsized cargo)- with those of a tactical airlifter like the C-130 -survivability, ability to operate on short, unimproved airfields, agility and maneuverability..." Source: Department of the Air Force, p. 13.

34. The Assault Follow-on Echelon (AFOE) consists of sealift ships carrying the sustainment for the landing force once it gets ashore. They are not amphibious ships or combatants and do not participate in opposed landings. They must, however, be immediately available to commence offloading once the landing force is established ashore.

35. The Department of the Navy has determined that a 12 MEU lift capability (12 big deck amphibians and supporting landing platforms) is needed in order to maintain forward presence in the EUCOM, PACOM and CENTCOM AORs. Two additional "big deck" amphibious ships (2 LHDs) beyond those currently programmed, are needed to maintain a 12 MEU lift.

36. By 2007 the following classes of ships are scheduled for retirement from the active fleet: LPH, LPD, LSD, LKA, and LST. A total of 13 ships of a new class (currently referred to as "the LX"), is needed to replace the LPD, LSD, LKA and LST classes.

37. This conclusion is seemingly contradictory to the reconstitution pillar of the National Military Strategy. Debating the validity and requirements for that pillar is beyond the scope of this paper. This author's viewpoint is that we must wisely allocate sufficient resources to ensure crisis response capability as a priority far ahead of reconstitution.

38. The U.S. Army significantly increased its capability during the decade of the 1980's. It also significantly increased its weight and deployment requirements. Armed Forces Journal International concluded that Army forces planned for deployment to NATO would require 37% more lift in 1989 than they did in 1980. Schemmer, p. 68.

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